

**DRAFT MEMORANDUM**

**SUBJECT:** Proposed Rule: Water Quality Standards; Establishment of a Numeric Criterion for Selenium for the State of California (Tier 3; SAN 6322; RIN 2040-AF79) –  
**ACTION MEMORANDUM**

**FROM:** David P. Ross  
Assistant Administrator

**THRU:** Office of Policy (1803A)  
Office of Executive Secretariat (1105A)

**TO:** Andrew R. Wheeler  
Acting Administrator (1101A)

**PURPOSE**

Attached for your signature is the proposed rule, Water Quality Standards; Establishment of a Numeric Criterion for Selenium for the State of California.

**DEADLINE/TIMELINES**

The U.S. Environmental Protection Agency (EPA) signed a consent decree in August, 2014 which requires the EPA to propose revised selenium water quality criteria that protect aquatic life and aquatic-dependent wildlife in certain fresh waters of California (excluding the San Francisco Bay Delta system and existing site-specific selenium criteria) or to approve California-adopted criteria covering the same waters by November 30, 2018. The consent decree requires that the EPA sign the proposed regulation by November 30, 2018 for subsequent publication in the Federal Register.

**DESCRIPTION OF THE ACTION**

The EPA is proposing to establish a federal Clean Water Act (CWA) selenium water quality criterion applicable to California that protects aquatic life and aquatic-dependent wildlife in certain fresh waters of California pursuant to a 2014 consent decree. Scientific evidence shows that elevated selenium levels can contribute to the decline of fish and aquatic-dependent birds, with the most severe toxic effects being reproductive impairments (e.g., decreased fertility, embryo mortality, skeletal, craniofacial, and fin deformities, and various forms of edema that result in mortality).

The EPA promulgated California’s existing freshwater selenium criteria for certain waters in the San Joaquin River watershed in 1992 as part of the National Toxics Rule (NTR), and for remaining freshwaters in California in 2000 as part of the California Toxics Rule (CTR), using the EPA’s CWA section 304(a) national recommended aquatic life selenium criteria at the time. Through the course of the California Toxics rulemaking, the EPA consulted with U.S. Fish and Wildlife Service and the U.S. National Marine Fisheries Service (collectively, the Services) pursuant to section 7(a)(2) of the Endangered Species Act (ESA). As part of that lengthy consultation process, the Services expressed concern about the protectiveness of the EPA’s selenium criteria for fresh waters in California. To address these concerns, the EPA committed, in a letter to the Services that was incorporated into the final Biological Opinion, to reserve (not promulgate) the acute selenium criterion and finalize only the chronic criterion. The EPA also committed to promulgate revised selenium criteria for aquatic life and aquatic-dependent wildlife to ensure there would be criteria in place that are protective of listed species and the designated uses of California.

Since the 2000 CTR, the EPA has fully investigated selenium bioaccumulation through diet in fish and wildlife. The EPA carefully analyzed the extensive, existing data on bioaccumulation and effects, and revised the CWA section 304(a) national recommended water quality criteria for selenium for freshwater (Final Aquatic Life Ambient Water Quality Criteria for Selenium – Freshwater 2016 (US EPA, Office of Water, EPA 822-R-16-006, June 2016)). Although selenium may cause acute toxicity at high concentrations (i.e., toxicity from a brief but highly elevated concentration of selenium in the water), chronic dietary exposure poses the highest risk to aquatic life and aquatic-dependent wildlife. Because chronic effects of selenium are observed at much lower concentrations than acute effects, a chronic criterion is expected to protect aquatic and aquatic-dependent communities from any potential acute effects of selenium. The current science shows that an acute criterion is not necessary to protect from the lethal effects of selenium if a protective chronic criterion is in place. As a result, the EPA’s 2016 CWA section 304(a) national recommended water quality criteria for selenium for freshwater is expressed as a chronic criterion (without an accompanying acute criterion).

In 2013, two organizations, Our Children’s Earth Foundation and Ecological Rights Foundation, filed a legal complaint against the EPA alleging that the EPA violated the CWA, the ESA, and the Administrative Procedures Act by failing to promulgate revised selenium criteria to protect threatened and endangered aquatic life and aquatic-dependent wildlife, as agreed to during ESA consultation on the 2000 California Toxics Rule. The EPA entered a consent decree with the litigants in August, 2014. Pursuant to the terms of the consent decree, the EPA committed to proposing selenium criteria for certain California fresh waters covered by the original California Toxics Rule to protect aquatic life and aquatic-dependent wildlife by November 30, 2018. The consent decree also requires that the EPA request initiation of any necessary ESA section 7(a)(2) consultation with the Services on the proposed selenium criteria no later than nine months after the date the EPA proposes the criteria. Further, under the consent decree, the EPA shall finalize the Agency’s proposal of selenium criteria within six months of either making a “no effect” determination, receiving written concurrence from the Services, or concluding formal consultation with the Services, whichever is later. If the EPA approves selenium criteria for the protection of aquatic life and aquatic-dependent wildlife submitted by California for all or any portion of fresh waters in the rest of California (which excludes waters of the San Francisco Bay

and Delta and waters with existing site-specific selenium criteria), the EPA would no longer be obligated to propose or finalize criteria for such waters.

At this time, California does not intend to initiate state-level rulemaking to adopt revised selenium water quality criteria and submit to the EPA for CWA section 303(c) review and action prior to the November 30, 2018 consent decree deadline. As a result, pursuant to the terms of the consent decree, the EPA is proposing to revise California's existing selenium criteria in the CTR to ensure protection of aquatic life and aquatic-dependent wildlife. The EPA's proposal of a revised chronic selenium criterion is necessary to complete actions initiated pursuant to the Administrator's 1997 and 2000 CTR determinations. If a protective chronic selenium criterion, such as the EPA is proposing, is ultimately promulgated, an acute criterion would no longer be necessary to meet the requirements of the CWA, and so the Administrator's acute selenium criterion determination contained in the 1997 and 2000 preambles to the CTR will be negated.

The EPA is proposing the Agency's 2016 CWA section 304(a) national recommended aquatic life selenium criterion for freshwater with the addition of a bird tissue criterion element and the replacement of the 304(a) selenium monthly average exposure water column criterion element with a performance-based approach for translating the tissue elements into corresponding site-specific water-column criterion elements. This approach maximizes the flexibility for dischargers and the State to develop water-column translations specifically tailored to each individual waterbody. If the EPA finalizes a selenium criterion that includes the proposed performance-based approach as part of this federal promulgation, each resulting site-specific water column criterion element will be effective for CWA purposes, without the need for EPA approval under CWA section 303(c).

The EPA is also soliciting public comment on an alternative to the proposed criterion. This alternative would be expressed in the same manner as the proposed criterion (same bird tissue, fish tissue, and intermittent exposure criterion elements), and include the water column criterion elements from the Agency's 2016 CWA section 304(a) selenium criterion for freshwater, either in addition to the performance-based approach or as a replacement of the performance-based approach. This proposed rule would provide California with the necessary criteria to ensure selenium levels in surface water in California are maintained at a level to support a broad range of aquatic life and aquatic-dependent wildlife, and in some cases, reduce the levels of selenium to enhance and protect aquatic ecosystems currently under stress.

#### **STAKEHOLDER INVOLVEMENT AND ANTICIPATED RESPONSE**

The revised proposed criterion would protect species that live in and use waters of California and would assist with restoration efforts currently underway. The EPA Region 9 worked closely with the California State Water Resources Control Board and the Services on this federal proposal. The EPA anticipates that industry stakeholders will likely support the proposal, as industry stakeholders supported the development of the updated CWA section 304(a) national recommended aquatic life criterion for selenium upon which this proposed rule is based. The EPA anticipates environmental groups may question whether the Agency has provided enough specificity and prescriptiveness with respect to implementing the selenium criterion and questioning the use of a performance-based approach for deriving site-specific water column elements instead of proposing the CWA 304(a) national recommended water column elements.

The EPA anticipates the State and tribes will appreciate that the criterion reflects the latest science but may have the same concerns as anticipated for environmental groups. The Services may find the bird tissue element under-protective. The EPA Region 9 will meet with each of the stakeholder groups shortly after publication of this rule.

#### **INTERNAL DEVELOPMENT AND REVIEW PROCESS**

This is a Tier 3 action. Workgroup members included staff from the Office of Water, The EPA Region 9, the Office of General Counsel, the Office of Regional Counsel, the Office of Research and Development, and the Office of Policy. Workgroup members were involved in all aspects of the rule development.

#### **INTERAGENCY REVIEW**

The OMB determined that this proposed rule is a significant action under Executive Order 12866 and is, therefore, subject to review under EOs 12866 and 13563.

#### **IMPACTS**

The proposed rule does not establish any requirements directly applicable to regulated entities or other sources of toxic pollutants. State implementation of these water quality standards may result in new or revised National Pollution Discharge Elimination System (NPDES) permit conditions for point source dischargers, and requirements for selenium pollution treatment controls on other sources through the development of additional Total Maximum Daily Loads (TMDLs). California has NPDES permitting authority and retains discretion in implementing standards.

The EPA's economic analysis estimates annual costs for point source controls, nonpoint source best management practices (BMPs), and administrative costs; the total annual costs range from \$40.9 to \$56.7 million per year. Annual costs include capital costs annualized over 20 years at 3% plus annual operating and maintenance costs. Annual costs also reflect a five-year implementation period for point sources and a 13-year development and implementation period for TMDLs.

This proposed rule is anticipated to result in environmental benefits, which are described qualitatively, but not quantified or monetized. There is both the potential for, and observed occurrences of, adverse impacts from selenium toxicity on aquatic life and aquatic-dependent wildlife in surface waters in California. Establishing protective criteria as water quality standards helps ensure that aquatic life and aquatic-dependent wildlife are protected and that impaired waters are addressed, and conditions improve.

In addition, this rule was developed in accordance with the EPA's Environmental Justice guidelines which found that the environmental risk addressed by this action will not have potential disproportionately high and adverse human health or environmental effects on minority, low-income or indigenous populations.

#### **PEER REVIEW**

The Office of Water has followed the EPA's Peer Review Policy with respect to the underlying Technical Support Document supporting this action.

**MANAGEMENT CONCERNS**

Staff are unaware of management concerns at this time.

**RECOMMENDATION**

I recommend that you sign the attached rulemaking.

Attachments (3)

- (1) Water Quality Standards; Establishment of a Numeric Criterion for Selenium for the State of California
- (2) Economic Analysis for Proposed Selenium Water Quality Standards Applicable to the State of California
- (3) Draft Translation of Selenium Tissue Criterion Elements to Site-Specific Water Column Criterion Elements for California Version 1, August 8, 2018